

## **V. PUBLIC INFRASTRUCTURE AND FACILITIES**

### **A. Infrastructure**

#### **1. Roads**

##### **a. Access Roads**

A traffic model will be created based on the “planning bubble” diagrams and the proposed density of the area. The model uses algorithms for the determination of car trips within, from and to the area. Proximity to the City of Kingman, Dolan Springs, Lake Mead Recreation Area and the West Rim of the Grand Canyon is considered in the traffic analysis. The average number of trips that a community of this size will take for work, play and other purposes, based on national trends, is used. One of the goals of Red Lake is to create a community that has a high degree of self-sufficiency, hence reducing the number of vehicle trips by residents outside the community for work, shopping and recreation, and minimizing the impact on Mohave County’s road system.

Traffic access to Red Lake will initially be provided along the existing county roads - Stockton Hill Road (C.R. 20), Antares Road (C.R. 149) and Pierce Ferry Road (C.R. 25). Improvements will be examined to meet the anticipated increased traffic demands from this community.

##### **b. Interior Road Network**

The design of the interior road network is based upon the “community” theme. This theme includes several north/south arterial streets which pass through the community and west/west arterial streets that serve only the community. Minor arterials will branch from the major arterials into the various subdivisions of the development for easy access.

Each subdivision will have at least one access point to the minor arteries. Minor arteries will connect the communities to the major arteries which convey traffic through, in and out of the community.

1. Goal: Provide easy functional access to the community.

Policy: Develop multiple points of ingress/egress. Design the road system so that cars are not all funneled to a single point.

2. Goal: Reduce the number of cars “passing through” the property.

Policy: Design a road network that funnels north/south pass through traffic to the pass-through arterials. Develop the rest of the road network with curvilinear designs that reduce speed and deter pass-through traffic.

3. Goal: Provide an open and scenic driving experience.

Policy: Construct roadways with landscape along the development setback boundaries such that the landscaping decreases noise and adds aesthetic appeal. Also, construct arterials which have parks, golf courses and other amenities adjacent to enhance the beauty of the existing landscape.

## **2. Water Delivery System**

Potable water for the Red Lake community will be supplied by groundwater from the Hualapai Basin. Wells will be utilized to pump groundwater into storage reservoirs, which will feed the Red Lake community by gravity. Independent transmission pipelines and separate distribution pipelines are recommended. Site topology dictates the need for only one pressure zone to serve the development; however, two reservoir storage sites are recommended to enhance system performance and provide system redundancy.

1. Goal: Provide safe, clean and constant water supply.

Policy: Design and construct a drinking water system that meets all ADWR, ADEQ and Mohave County requirements for water quality and quality of the constructed product.

2. Goal: Provide for full fire service.

Policy: Construct the water system to have adequate pressures and flow capacity to handle fire suppression at any hydrant.

3. Goal: Provide a 100-year adequate water supply.

Policy: Apply for a 100-year Letter of Water Adequacy from ADWR. The application will be for a water demand equal to or greater than the proposed development.

4. Goal: Conserve water through the use of "grey water."

Policy: Use treated effluent for irrigation of the community's golf course and park spaces



### 3. Sewage Collection and Treatment

The Red Lake community will rely on a gravity collection system with lift stations to transport wastewater to the treatment plant. The Red Lake wastewater collection system will be designed in accordance with State and County requirements.

The Red Lake treatment plant will be located outside the 100-year flood plain. This will require the use of low-head lift stations to pump wastewater out of the development to a suitable elevation above the floodplain. The design of the Red Lake sewage treatment plant will be modular. This allows the owner to minimize initial capital expenditures while being able to maintain optimum treatment capacity. As the community develops, additional treatment capacity can be modularly constructed.

1. Goal: Provide a sewage collection system for the Red Lake community.

Policy: Plan, design, and construct a wastewater collection system which meets ADEQ and Mohave County requirements.

2. Goal: Provide sewage treatment for the Red Lake community.

Policy: Plan, design, and construct a wastewater treatment system which provides high-quality effluent and may be expanded to meet increasing development contributions.

3. Goal: Provide effluent disposal facilities for excess Red Lake effluent.

Policy: Plan, design, and construct effluent disposal facilities (i.e. rapid infiltration basins, recharge wells) to dispose effluent in excess of community's reclaimed demand.

4. Goal: Maximize reuse of sewage effluent.

Policy: Construct a sewage treatment plant which provides high-quality effluent for use on all public open spaces. Construct a piping system to convey the re-use water to all public open spaces.

5. Goal: Recharge all excess effluent to the Hualapai Basin aquifer.

Policy: Construct rapid infiltration basins and/or recharge wells for the disposal of excess effluent into the Hualapai Basin aquifer.

#### **4. Solid Waste Management**

For the foreseeable future, Red Lake will utilize the Cerbat Landfill to meet the community's solid waste management needs. This landfill currently has sufficient capacity to maintain operations for another 40-50 years. As Rhodes Homes develops communities in Mohave County, it will monitor the capacity of the Cerbat Landfill and work with county officials to identify future landfill sites.

#### **5. Flood control**

The Red Lake Community is located at Red Lake and along the eastern slopes of the Cerbat Mountains. The wash, located between the White Hills, Cerbat Mountains and the Music Mountains is called the Hualapai Wash and it drains into the Red Lake. CLOMR and LOMR applications will be made to re-contour the Special Flood Hazard Area boundaries within Red Lake to accommodate the same volume existing in the dry lake bed bottom. This allows this dead area to come alive with desert landscaping and a vibrant ecosystem while maintaining the flood capacity currently available.

Within the community, each major subdivision will provide local detention facilities doubling as recreation areas to mitigate runoff to predevelopment levels and improve water quality.

Flood control through the development is intended to be handled by maximizing use of the washes that cut through the development. Utilizing the natural washes in this manner reduces the amount of grading necessary, allowing for a trail system in the open spaces, reducing the cost of development and improving the aesthetic appeal.

1. Goal: Provide a safe environment for the community.

Policy: Combine maximum usage of the existing wash system with intelligent design of multi-use detention basins and strategic wash improvements to create a flood control system that routes a 100-year design storm safely through the development.

2. Goal: Accommodate the Clean Water Act and the FEMA regulations.

Policy: Provide applications to the federal agencies early in the process; get them involved in the design of the community.

3. Goal: Protect plant and animal life long term.



Policy: Construct localized detention/retention basins throughout the community to restore runoff levels to predevelopment levels, filtering the water and thus preventing contaminants from entering the wash system.

## B. Public Facilities

### 1. Parks

#### a. Park and Recreational Standards

Parks, recreation and open space facilities will be provided for Red Lake in concert with the national standards shown in the following tables:

Feature Category	Park System Feature	Units needed per 1,000 Residents	Acres Per 1,000 Residents
Parks	Pocket Parks –Min. 1/3 acre	Service Area- ¼ mile radius	.25
Parks	Neighborhood Parks – Min. 4 acres	Service area - ½ mile radius	.5 acres per 1,000 Serves 2,500 min.
Parks	Community – Min. 20 acres	Service area - 2 mile radius	1-2 acres per 1,000 Serves min. 10,000
Community Center	3 acres and 10,000 sq. ft.		1 per 20,000
Outdoor Recreation	Small Skate park	.16	.03
	Full Sized Skate park	.06	.03
	BMX Track	.16	.50
	Paved Multi-Use Trail (per mile)	1.04	2.53
	Dirt/Gravel Multi-Use Trail (per mile)	2.33	4.25
	Family Picnic Area	6.25	.08
	Group Picnic Area with Shelter	.36	.74
	Park Bench	7.69	.00
	Outdoor Events Venue (per acre)	.42	1.34

Source: Small Community Parks & Recreation Planning Standards – 2003.

Facility/Activity	Recommended space requirements	No. of Units per Population	Service Radius
Basketball	2,400 to 7,280 sq. ft.	1 per 5,000	¼ to ½ mile
Handball	800 to 1,000 sq. ft.	1 per 20,000	15 to 30 minute travel time